The John Lawrence Seminars

BERKELEY LAB
Lawrence Berkeley National Laboratory

"Single-Molecule Biochemistry and Chemical Biology of Human Transcription Dynamics"

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Janelia Research
Campus of HHMI

Human RNA polymerase II (Pol II) transcription is a highly regulated process that relies on the orchestrated action of multiple factors. The dynamics (timing and coordination) of these interactions on promoter DNA are believed to play key roles in gene regulation, but they have been elusive to conventional studies. By chemically perturbing the conformational changes of TFIID, the key promoter-recognition factor, we have revealed two distinct Pol II entry pathways, with interesting biomedical implications. By directly visualizing promoter binding of another factor TFIIB at the single-molecule level, we have discovered an unexpected transient-to-stable transition, which connects rapid dynamic interactions to functional transcription complex assembly, and provides novel regulation mechanisms. Our work also highlighted the critical role of intrinsically disordered proteins/regions (IDPs/IDRs) in gene regulation.

Tues., June 14th
4:00 p.m.

Berkeley Lab
Building 33
Room 106

(note location!)

Host:
Paul Adams

Schedule of Seminars: http://johnlawrenceseminars.lbl.gov
Non-LBNL attendees: please RSVP to FGuagliardo@lbl.gov or 510-486-6490